CLAIMS:

1.   A method of coding an audio signal, the method comprising:
            generating a monaural signal,
            analyzing the spatial characteristics of at least two audio channels to obtain
one or more sets of spatial parameters for successive time slots,
5   responsive to said monaural signal containing a transient at a given time,
determining a non-uniform time segmentation of said sets of spatial parameters for a period
including said transient time, and
            generating an encoded signal comprising the monaural signal and the one or
more sets of spatial parameters.
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2.   A method according to claim 1 wherein said monaural signal comprises a
combination of at least two input audio channels.

3.   A method according to claim 1 wherein said monaural signal is generated with
15   a parametric sinusoidal coder, said coder generating frames corresponding to successive time
slots of said monaural signal, at least some of said frames including parameters representing
a transient occurring in the respective time slots represented by said frames.

4.   A method according to claim 1 wherein said monaural signal is generated with
20   a waveform encoder, said coder determining a non-uniform time segmentation of said
monaural signal for a period including said transient time.

5.   A method according to claim 4 wherein said waveform encoder is a mp3
encoder.
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6.   A method according to claim 1 wherein said sets of spatial parameters include
at least two localization cues.

7.   A method according to claim 6 wherein said sets of spatial parameters further comprises a parameter that describes a similarity or dissimilarity of waveforms that cannot be accounted for by the localization cues.

5   8.   A method according to claim 7 wherein the parameter is a maximum of a cross-correlation function.

9.   An encoder for coding an audio signal, the encoder comprising:
           means for generating a monaural signal,
10   means for analyzing the spatial characteristics of at least two audio channels to obtain one or more sets of spatial parameters for successive time slots,
           means, responsive to said monaural signal containing a transient at a given time, for determining a non-uniform time segmentation of said sets of spatial parameters for a period including said transient time, and
15   means for generating an encoded signal comprising the monaural signal and the one or more sets of spatial parameters.

10.   An apparatus for supplying an audio signal, the apparatus comprising:
           an input for receiving an audio signal,
20   an encoder as claimed in claim 9 for encoding the audio signal to obtain an encoded audio signal, and
           an output for supplying the encoded audio signal.

11.   An encoded audio signal, the signal comprising:
25   a monaural signal containing at least one indication of a transient occurring at a given time in said monaural signal; and
           one or more sets of spatial parameters for successive time slots of said signal, said sets of spatial parameters providing a non-uniform time segmentation of audio signal for a period including said transient time.
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12.   A storage medium on which an encoded signal as claimed in claim 11 has been stored.

13.   A method of decoding an encoded audio signal, the method comprising:

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obtaining a monaural signal from the encoded audio signal,

obtaining one or more sets of spatial parameters from the encoded audio

signal, and

responsive to said monaural signal containing a transient at a given time,

5   determining a non-uniform time segmentation of said sets of spatial parameters for a period

including said transient time, and

applying the one or more sets of spatial parameters to the monaural signal to

generate a multi-channel output signal.

10   14.   A decoder for decoding an encoded audio signal

means for obtaining a monaural signal from the encoded audio signal,

means for obtaining one or more sets of spatial parameters from the encoded

audio signal, and

means, responsive to said monaural signal containing a transient at a given

15   time, for determining a non-uniform time segmentation of said sets of spatial parameters for a

period including said transient time, and

means for applying the one or more sets of spatial parameters to the monaural

signal to generate a multi-channel output signal.

20   15.   An apparatus for supplying a decoded audio signal, the apparatus comprising:

an input for receiving an encoded audio signal,

a decoder as claimed in claim 14 for decoding the encoded audio signal to

obtain a multi-channel output signal,

an output for supplying or reproducing the multi-channel output signal.